

WHAT IS CLAIMED IS:

1. A display device comprising:
- a. a plurality of cathode wires,
 - b. a plurality of anode wires arranged in a matrix shape
- 5 together with said plurality of cathode wires,
- c. light emitting elements disposed between said plurality of cathode wires and anode wires,
 - d. a current source to said anode wires,
 - e. a voltage source to said cathode wires,
- 10 f. an anode control circuit for connecting between said anode wires and said current source,
- g. a cathode control circuit for connecting between said cathode wires and said voltage source, and
 - h. a display controller for controlling said anode control
- 15 circuit and said cathode control circuit,
- i. wherein said display controller comprises a setting unit for setting the discharge time for discharging the accumulated charge of said light emitting elements before light emission of the light emitting elements, and operates and
- 20 controls said anode control circuit and said cathode control circuit for discharging the accumulated charge of said light emitting elements within said set discharge time, and also operates and controls said anode control circuit and said cathode control circuit for emitting said light emitting
- 25 elements after discharge control of said accumulated

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charge.

2. The display device of claim 1, wherein said plurality of anode wires are formed in stripes, and said plural cathode wires are also formed in stripes.

3. The display device of claim 1, wherein supposing the luminance of said light emitting element when emitting light in no-charge or almost no-charge accumulated state to be L_e , and the luminance by actual light emission to be L_p , they are in the relation of

$$L_p \geq 0.9 \times L_e$$

, and further supposing the discharge time to satisfy this relation to be T_x , the discharge time R_t of actual discharge is determined to satisfy the relation of

$$T_x \leq R_t.$$

4. The display device of claim 3, wherein the discharge time R_t is set to satisfy the relation of

$$R_t \leq B \times T_x \text{ (where } 1 < B < 10)$$

where R_t is the discharge time of actual discharge, and T_x is the discharge time.

5. A driving method of a display device, relating to:

a. a display device comprising a plurality of cathode wires, a

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plurality of anode wires arranged in a matrix shape together with said plurality of cathode wires, and light emitting elements disposed between said plurality of cathode wires and anode wires, and

b. a driving method of said display device for discharging the accumulated charge of said light emitting elements before light emission of the light emitting elements, wherein

c. supposing the luminance of said light emitting element when emitting light in no-charge or almost no-charge accumulated state to be Le , and the luminance by actual light emission to be Lp , they are in the relation of

$$Lp \geq 0.9 \times Le$$

and further supposing the discharge time to satisfy this relation to be Tx , the discharge time Rt of actual discharge is determined to satisfy the relation of

$$Tx \leq Rt.$$

6. The driving method of the display device of claim 5, wherein the discharge time Rt is set to satisfy the relation of

$$Rt \leq B \times Tx \text{ (where } 1 < B < 10\text{)}$$

where Rt is the discharge time of actual discharge, and Tx is the discharge time.

7. ~~The display device of claim 1, wherein Tf is the rise time of said light emitting element accumulating the charge sufficiently, and Te is the rise time of said second light emitting element having no~~

charge accumulated in the light emitting element or almost no charge accumulated, being in the relation of

$$T_p = K \times (T_f - T_e) + T_e \text{ (where } 0 < K < 0.5 \text{)}$$

and the rise time T_p to satisfy this relation is determined, and

5 further supposing the discharge time corresponding to said rise time T_p to be T_y , and the discharge time of actual discharge to be R_t , the discharge time R_t is set to satisfy the relation of

$$T_y \leq R_t.$$

10 8. The display device of claim 7, wherein the discharge time R_t is set so satisfy the relation of

$$R_t \leq B \times T_y \text{ (where } 1 < B < 10 \text{)}$$

where R_t is the discharge time of actual discharge, and T_y is the discharge time.

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9. ~~A driving method of a display device, relating to:~~

a. a display device comprising a plurality of cathode wires, a plurality of anode wires arranged in a matrix shape together with said plurality of cathode wires, and light emitting elements disposed
20 between said plurality of cathode wires and anode wires, and

b. a driving method of said display device for discharging the accumulated charge of said light emitting elements just before light emission of the light emitting elements, wherein

c. T_f is the rise time of said second light emitting element
25 ~~accumulating the charge sufficiently in the light emitting element,~~

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and T_e is the rise time of said second light emitting element having no charge accumulated in the light emitting element or almost no charge accumulated, being in the relation of

$$T_p = K \times (T_f - T_e) + T_e \text{ (where } 0 < K < 0.5)$$

- 5 and the rise time T_p to satisfy this relation is determined, and further supposing the discharge time corresponding to said rise time T_p to be T_y , and the discharge time of actual discharge to be R_t , the discharge time R_t is set to satisfy the relation of

$$T_y \leq R_t.$$

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10. The driving method of display device of claim 9, wherein the discharge time R_t is set so satisfy the relation of

$$R_t \leq B \times T_y \text{ (where } 1 < B < 10)$$

- 15 where R_t is the discharge time of actual discharge, and T_y is the discharge time.

- 20 11. The display device of claim 1, wherein supposing the maximum value of the discharge current value flowing by discharge of said accumulated charge to be I_p , the time required for the discharge current to reach the discharge current value I_d to satisfy

$$I_d = D \times I_p \text{ (where } 0 < D < 0.3)$$

to be T_z , and the actual discharge time to be R_t , the discharge time R_t is set to satisfy the relation of

$$T_z \leq R_t.$$

12. The display device of claim 11, wherein the discharge

$$R_t \leq B \times T_z \text{ (where } 1 < B < 10\text{)}$$

5 discharge time.

13. ~~A driving method of a display device, relating to:~~

a. a display device comprising a plurality of cathode wires, a plurality of anode wires arranged in a matrix shape together with said plurality of cathode wires, and light emitting elements disposed between said plurality of cathode wires and anode wires, and

b. a driving method of said display device for discharging the accumulated charge of said light emitting elements just before light emission of the light emitting elements, wherein

c. supposing the maximum value of the discharge current value flowing by discharge of said accumulated charge to be I_p , the time required for the discharge current to reach the discharge current value I_d to satisfy

$$I_d = D \times I_p \text{ (where } 0 < D < 0.3)$$

to be T_z , and the actual discharge time to be R_t , the discharge time R_t is set to satisfy the relation of

~~$T_z \leq R_t.$~~

14. The driving method of display device of claim 13, wherein the discharge time R_t is set so satisfy the relation of

$$R_t \leq B \times T_z \text{ (where } 1 < B < 10)$$

where R_t is the discharge time of actual discharge, and T_z is the discharge time.

- 5 15. A portable terminal comprising:
- a) an audio signal converter for converting sound into an audio signal,
 - b) an operation unit for entering telephone number or the like,
 - 10 c) a display unit for displaying incoming notice, telephone number, or the like,
 - d) a communication unit for converting the audio signal into a transmission signal,
 - e) a receiver for converting the reception signal into an audio
 - 15 signal,
 - f) an antenna for transmitting and receiving said transmission signal and reception signal, and
 - g) a controller for controlling each part,
- wherein said display unit is composed of the display device of
- 20 claim 1.

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